

SUPPORT FOR THE AMENDMENTS

The present amendment cancels claims 19 and 20, and amends claims 1 and 22.

Support for the amendment to claims 1 and 22 is found at specification page 16, lines 6-10 and 21-24, as well as original claim 20.

It is believed that these amendments have not resulted in the introduction of new matter.

REMARKS

Claims 1-8, 10-18 and 21-23 are currently pending in the present application. Claims 19 and 20 have been cancelled, and claims 1 and 22 have been amended, by the present amendment.

The rejection of claims 1-6 and 10-21 under 35 U.S.C. § 103(a) as being obvious over Hasegawa (EP 1252973) in view of Petroski (U.S. 2004/0018809) is obviated by amendment, with respect to claims 1-8, 10-18 and 21-23.

Amended claim 1 recites an abrasive pad comprising: an abrasive substrate having a polishing surface; and a light transmitting member, wherein each of the abrasive substrate and the light transmitting member comprise a water-insoluble matrix material and a water-soluble substance dispersed in the water-insoluble matrix material, wherein each of the water-insoluble matrix material of the abrasive substrate and the light transmitting member comprise a *same polymer*, and wherein the light transmitting member and the abrasive substrate are *fused and bonded together by melting the bonding surfaces of both* of the light transmitting member and the abrasive substrate. Previously presented claim 21 recites that the same polymer is 1,2-polybutadiene.

Amended claim 22 recites an abrasive pad comprising: an abrasive substrate having a polishing surface and *consisting of* a water-insoluble matrix material; and a light transmitting member comprising a water-insoluble matrix material and a water-soluble substance dispersed in the water-insoluble matrix material, wherein the water-insoluble matrix material of the abrasive substrate and the light transmitting member comprise a *same polymer*, and wherein the light transmitting member and the abrasive substrate are *fused and bonded together by melting the bonding surfaces of both* of the light transmitting member and the abrasive substrate. Previously presented claim 23 recites that the same polymer is 1,2-polybutadiene.

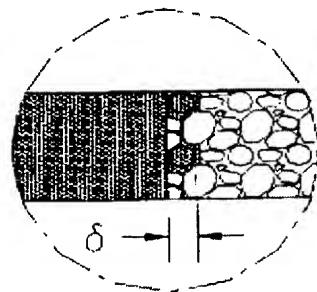
Applicants have discovered that by *melting the bonding surfaces of both* the light transmitting member and the abrasive substrate, as well as utilizing the *same polymer* in the water-insoluble matrix material in both the light transmitting material and the abrasive substrate, the light transmitting member and the abrasive substrate are *more firmly fused and bonded together.*

Unlike the claimed invention, Hasegawa describes a polishing pad for a semiconductor wafer comprising a substrate and a light transmitting part that is *merely fitted* in the substrate (See e.g., 4. of [0008], [0055], [0057], Fig. 12-22 of [0085], [0091] and [0092] of Example 2). Hasegawa fails to describe that the light transmitting member and the abrasive substrate are *fused and bonded together by melting the bonding surfaces of both* the light transmitting member and the abrasive substrate, as claimed in amended claims 1 and 22. Hasegawa also fails to describe that the substrate and the light transmitting part *must be composed of the same polymer*, namely 1,2-polybutadiene, as required in amended claims 1 and 22 and previously presented claims 21 and 23 (See e.g., Example 2 on page 11 of Hasegawa, which describes a polishing pad comprising a polyurethane (polycarbamate) substrate having a 1,2-polybutadiene light transmitting part fitted therein. Furthermore, Hasegawa fails to describe that the abrasive substrate *consists of* a water-insoluble material, as claimed in amended claim 22 (See e.g., [0011]-[0012] of Hasegawa, which describes the presence of water-soluble particles dispersed within the water-insoluble material of the abrasive substrate).

Petroski describes a polishing pad for a semiconductor wafer comprising: a porous fibrous matrix of cellulose fibers that are impregnated and bound together with a phenolic thermoset resin; and a transparent window comprising a transparent polymer that is merely interconnected to the porous fibrous matrix by physical diffusion of the transparent polymer into the porous fibrous matrix, wherein the transparent polymer is selected from

polypropylene (PP), acrylonitrile-butadiene-styrene (ABS), polycarbonate (PC), acrylic-styrene-acrylonitrile (ASA), polyphenylene ether (PPE), and polyetherimide (PEI) (See e.g., [0020]-[0022]).

Unlike the claimed invention, the transparent polymer of Petroski is merely *interconnected* to the porous fibrous matrix by *physical diffusion* of the transparent polymer into the porous fibrous matrix. More specifically, the transparent polymer, which is flowing due to being heated to a temperature at or above the melting point and/or softening point thereof, is *injected into and impregnated within the interstitial spaces* located between the cellulose fibers of the porous fibrous matrix by a certain diffusion depth “ δ ” to thereby physically interconnect the transparent polymer to the porous fibrous matrix, as shown in Figure 3B below (See e.g., [0022], [0025], and Figures 3A, 3B, and 5).



Petroski fails to describe that the light transmitting member and the abrasive substrate are *fused and bonded together by melting the bonding surfaces of both* the light transmitting member and the abrasive substrate, as claimed in amended claims 1 and 22. As previously discussed, the thermoset resin of Petroski is a *phenolic resin*, whereas the transparent polymer of Petroski is selected from *PP, ABS, PC, ASA, PPE, and PEI*. Therefore, unlike the abrasive substrate and the light transmitting member of the present invention, which are composed of the *same polymer*, namely 1,2-polybutadiene, the thermoset resin and the transparent polymer of Petroski are composed of *different polymers*.

Hasegawa and Petroski fail to describe that the light transmitting member and the abrasive substrate are fused and bonded together by melting the bonding surfaces of both the light transmitting member and the abrasive substrate, as claimed in amended claims 1 and 22. In addition, Hasegawa and Petroski fail to describe that the substrate and the light transmitting part must be composed of the same polymer, namely 1,2-polybutadiene, as required in amended claims 1 and 22 and previously presented claims 21 and 23. As a result, Hasegawa and Petroski necessarily fail to recognize the advantage of more firmly fusing and bonding together the light transmitting member and the abrasive substrate by melting the bonding surfaces of both the light transmitting member and the abrasive substrate, as well as utilizing the same polymer in the water-insoluble matrix material in both the light transmitting material and the abrasive substrate.

Withdrawal of this ground of rejection is respectfully requested.

With respect to the Examiner's request to cancel withdrawn claims 7 and 8, the Examiner is respectfully reminded that upon a determination that the product claims drawn to the elected invention are found allowable, method claims drawn to the non-elected invention should be rejoined and examined for patentability, pursuant to MPEP § 821.04 and *In re Ochiai*, 71 F.3d 1565, 37 USPQ2d 1127 (Fed. Cir. 1995).

Applicants respectfully request reconsideration of the withdrawal of claims 22 and 23 from consideration by the Examiner. The Official Action dated October 15, 2007, states on pages 2 and 3, that claims 22 and 23 are independent or distinct from the originally claimed invention and are therefore withdrawn from consideration as being directed to a non-elected invention. Contrary to the Official Action however, the subject matter recited in claims 22 and 23, finds clear support in previously presented and examined claims 1, 3, 13, 15, 16 and 21, as illustrated below.

Previously presented and examined claims 1 and 21 recite:

An abrasive pad comprising: an abrasive substrate having a polishing surface; and a light transmitting member, wherein each of the abrasive substrate and the light transmitting member comprise a water-insoluble matrix material and a water-soluble substance dispersed in the water-insoluble matrix material, wherein each of the water-insoluble matrix material of the abrasive substrate and the light transmitting member comprise a same polymer, wherein the light transmitting member is fused to the abrasive substrate (as claimed in claim 1), and wherein the same polymer is 1,2-polybutadiene (as claimed in claim 21).

Withdrawn claims 22 and 23, as previously presented, recite:

An abrasive pad comprising: an abrasive substrate having a polishing surface and *consisting of* a water-insoluble matrix material; and a light transmitting member comprising a water-insoluble matrix material and a water-soluble substance dispersed in the water-insoluble matrix material, wherein the water-insoluble matrix material of the abrasive substrate and the light transmitting member comprise a same polymer, wherein the light transmitting member is fused to the abrasive substrate (as claimed in claim 22), and wherein the same polymer is 1,2-polybutadiene (as claimed in claim 23).

Based on the foregoing, it is readily apparent that the primary difference between withdrawn claims 22 and 23 and previously presented and examined claims 1 and 21 is that claim 22 recites the transitional phrase “consisting of” thereby limiting the scope of the abrasive substrate to consist of only the water-insoluble matrix material.

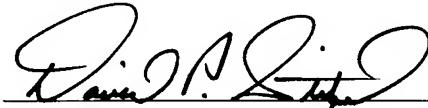
By virtue of having already issued an Official Action on the merits rejecting claims 1, 3, 13, 15, 16 and 21, it is reasonable to conclude that claims 22 and 23 have already been treated on their merits with respect to the patentability of the claimed subject matter recited therein. Therefore, Applicants respectfully request that the Examiner vacate the withdrawal of claims 22 and 23, and provide an indication as to whether the transitional phrase “consisting of” in combination with the current amendment to claim 22, places these claims as presently presented, in condition for allowance.

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In conclusion, Applicants submit that the present application is now in condition for allowance and notification to this effect is earnestly solicited.

Respectfully submitted,

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